

Title (en)  
DISCHARGE HEAD, HEAD MODULE, AND DISCHARGE APPARATUS

Title (de)  
AUSSTOSSKOPF, KOPFMODUL UND AUSSTOSSVORRICHTUNG

Title (fr)  
TÊTE DE DÉCHARGE, MODULE DE TÊTE ET APPAREIL DE DÉCHARGE

Publication  
**EP 4303011 A1 20240110 (EN)**

Application  
**EP 23179666 A 20230616**

Priority  
JP 2022105237 A 20220630

Abstract (en)  
A discharge head (100) includes a nozzle plate (110), a channel substrate (120), and a protector (180). The nozzle plate (110) has a discharge face (110a) having nozzles (111) from which a material is discharged in a discharge direction. The channel substrate (120) is disposed on the nozzle plate (110). The channel substrate (120) has a channel communicating with the nozzles (111). The protector (180) is bonded to both sides of the nozzle plate (110) in a first direction orthogonal to the discharge direction with a resin (181; 182). The resin (181; 182) covers an outer edge portion (110b) of the discharge face (110a) in the first direction. The resin (181; 182) extends in a second direction intersecting the first direction.

IPC 8 full level  
**B41J 2/14** (2006.01); **B41J 2/16** (2006.01)

CPC (source: EP US)  
**B41J 2/14201** (2013.01 - EP); **B41J 2/1433** (2013.01 - US); **B41J 2/1607** (2013.01 - EP); **B41J 2/1623** (2013.01 - EP);  
**B41J 2002/14362** (2013.01 - EP)

Citation (applicant)  
JP 2002160369 A 20020604 - CANON KK

Citation (search report)  
• [XY] US 2009058935 A1 20090305 - OWAKI HIROSHIGE [JP]  
• [XY] US 2014292914 A1 20141002 - ENOMOTO KATSUMI [JP], et al  
• [XY] WO 2008149836 A1 20081211 - SHARP KK [JP], et al  
• [X] US 2017008291 A1 20170112 - OWAKI HIROSHIGE [JP], et al

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4303011 A1 20240110**; JP 2024005168 A 20240117; US 2024001673 A1 20240104

DOCDB simple family (application)  
**EP 23179666 A 20230616**; JP 2022105237 A 20220630; US 202318212722 A 20230622